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1. TITLE OF THE INVENTION

Memory Data Transfer Process For Information Processing System

2. WHAT IS CLAIMED IS:

1. A memory data transfer process for information processing system,

wherein a plurality of pieces of information processing equipment respectively provided with a storage region, a communication means, and a transfer conditions setting means to set memory data transfer conditions based on a transfer range of memory data and a communication speed of the memory data that are input by an operator are interconnected with one another through a data communication line,

the plurality of pieces of information processing equipment respectively comprising:

a communication speed decision means of the memory data to automatically decide the communication speed of the memory data to be transferred between a first counterpart and a second counterpart of the pieces of information processing equipment and to transfer information data on the communication speed as decided to the second counterpart prior to the memory data being transferred to the second counterpart;

a memory range data transfer means to transfer information on the transfer range of the memory data to the second counterpart prior to the memory data being transferred to the second counterpart; and

a preparatory setting means to receive the communication speed and transfer range of the memory data so as to secure a region for the memory data as transferred in a memory unit of the second counterpart.

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### 3. DETAILED DESCRIPTION OF THE INVENTION

#### (TECHNICAL FIELD)

The present invention relates to the use of memory data transfer process for information processing system, in more details, pertaining to the memory data transfer process between transmission-side information processing equipment and reception-side information processing equipment.

#### (SUMMARY)

The invention is intended for automatically setting conditions for memory data transfer so as to prevent human operational errors from happening in the memory data transfer process for information processing system in which a plurality of pieces of information processing equipment respectively provided with a storage unit and a communication means are interconnected with one another through a data communication line, by automatically deciding a communication speed and adding a transfer process of transfer memory range data so as to execute communication before memory data is transferred, thereby setting transmission-side equipment to have the same data in common with reception-side equipment.

#### (PRIOR ART)

FIG. 3 shows the operational steps of the memory data transfer process according to the prior art. Upon a range of the memory data to be transferred and a communication speed of the memory data as required being input to both the transmission-side and the reception-side equipment at Steps 13, 17 and Steps 14, 18, the respective pieces of equipment set H×W conditions based on the input data and prepare transferring the memory data at Steps 15 and 19, which memory data is transferred through a memory data transmission processing procedure or a memory data

reception processing procedure at Steps 16 and 20.

Namely, a communication speed information data and a memory range information data are input to the transmission-side equipment so that the memory data is transferred according to a value designated by the input communication speed information data and a range of the memory data to be transferred is designated according to the input memory range data.

The above operational steps also apply to the reception-side equipment. Thereafter, the transmission-side equipment reads out the memory data based on the range of the memory data to be transferred as input thereto so as to transfer the memory data to the reception-side equipment while the reception-side equipment writes the memory data therein based on the range of the memory data to be transferred as input thereto. With this, those two pieces of processing equipment have the same data in their respective memory units in common, which allows the processing operation of the same data in common to be apportioned and the processing operation thereof to be concurrently performed between them.

(ISSUE TO BE SOLVED)

The above prior memory data transfer process is prone to cause such operational errors as the input data being inconsistent between the transmission-side and the reception-side equipment because the same processing operational steps apply to both of the transmission-side and reception-side equipment to complicate the operation of the memory data transfer process.

In order to solve the above issue, the present invention is to provide a memory data transfer process to do without human operational errors by automatically setting conditions for the memory data transfer.

(MEANS TO SOLVE ISSUE)

In a memory data transfer process for information processing system in which a plurality of pieces of information processing equipment respectively provided with a storage region, a communication means and a memory data transfer conditions setting means to set memory data transfer conditions based on a range of the memory data to be transferred and a communication speed of the memory data that are input by an operator are interconnected with one another through a data communication line, the invention is characterized in that the plurality of pieces of information processing equipment respectively comprise a communication speed decision means of the memory data to automatically decide the communication speed of the memory data to be transferred between a first counterpart and a second counterpart of the pieces of information processing equipment and then to transfer information data on the communication speed as decided to the second counterpart prior to the memory data being transferred to the second counterpart; a memory range data transfer means to transfer information data on the transfer range of the memory data to the second counterpart prior to the memory data being transferred to the second counterpart; and a preparatory setting means to receive the communication speed and the transfer range of the memory data so as to secure a region for the memory data as transferred in a memory unit of the second counterpart.

#### (OPERATION)

Such arrangement is adopted herein as data communication being carried out at a predetermined communication speed with a procedure to automatically decide a communication speed of the memory data and then to transfer information data on the communication speed as decided and a procedure to transfer information on the transfer range of the memory data

added to the known memory data transfer process prior to the memory data being transferred so that the transmission-side equipment has the same data in common with the reception-side equipment. This arrangement allows conditions for the memory data transfer to be automatically set and the memory data to be transferred just by inputting a range of the memory data to be transferred to the transmission-side equipment so as to reduce human operational errors.

#### (EMBODIMENT)

Then, a preferred embodiment of the invention is described in details as follows with reference to the accompanying drawings. FIG. 1 is a block diagram showing an arrangement embodied according to the invention.

The memory data transfer process for information processing system, in which a plurality of pieces of information processing equipment 10 are interconnected with one another through a data communication line 20 and are respectively provided with a communication means 11, a storage region 12 and a memory data transfer conditions setting means 13 to set memory data transfer conditions based on a range of the memory data to be transferred and a communication speed of the memory data that are input by an operator, comprises herein a communication speed decision means of the memory data 14 to automatically decide a communication speed thereof to be transferred between a first counterpart and a second counterpart of the pieces of information processing equipment and then to transfer information on the communication speed to the second counterpart and a memory range data transfer means 15 to transfer information on a transfer range of the memory data to the second counterpart prior to the memory data being transferred to the second counterpart, and a preparatory setting means 16 to receive the communication speed and the transfer range of the

memory data as transferred from the first counterpart so as to secure a region for the memory data as transferred in a memory unit 30 of the second counterpart.

Then, the operational steps according to the above embodiment are explained below. FIG. 2 is a flow chart showing the operational procedures thereof.

Firstly, a transfer range of the memory data is input to transmission-side equipment at Step 1, which equipment waits for receiving communication speed information data from reception-side equipment at Step 2. The reception-side equipment begins to operate upon the transfer range of the memory data being input at Step 1 and sends out a communication speed information data to the transmission-side equipment while waiting for the reception of the speed information data by the transmission-side equipment at Step 8.

At Step 9, upon the transmission-side equipment having received the speed information data, it decides a communication speed of the memory data based on the speed information data as received and the maximum speed of its own at Step 3. At Step 4, the speed information data as decided by the transmission-side equipment is sent out to the reception-side equipment while the transmission-side equipment alters a communication speed of the memory data based on the speed information data as decided and waits for a certain duration of time at Step 5.

Upon the reception-side equipment having received the speed information data sent out at Step 4, it alters a communication speed of the memory data based on the speed information data as received and waits for receiving the memory data as transferred at Step 10.

The above operational steps apply at a predetermined communication

speed.

Then, the transmission-side equipment sends out the transfer range of the memory data as received at Step 1 to the reception-side equipment at Step 6, which equipment sets a transfer range of the memory data at Step 11 based on the transfer range of the memory data as received.

Upon the transmission-side equipment having sent out the transfer range of the memory data at Step 6, it reads out a memory data for transfer at Step 7, which memory data the reception-side equipment receives so as to write the same in its memory unit at Step 12.

Repeating the operational steps 7 through 12 allows the memory data falling within the transfer range as designated to be transferred at a high communication speed.

Both of the transmission-side and reception-side information processing equipment, between which the memory data is transferred, have the same data in their respective memory units. This allows the processing procedures of the memory data to be apportioned and the processing operation thereof to be concurrently performed between both sides of the information processing equipment.

#### (EFFECT)

As described above, according to the invention, prior to the memory data being transferred, communication is carried out with a procedure to automatically decide a communication speed of the memory data to transfer a speed information data and to transfer a transfer range information of the memory data added to the known memory data transfer process, so that the transmission-side equipment has the same data in common with reception-side equipment. This allows the memory data to be transferred just by inputting a transfer range of the memory data to the

transmission-side equipment, which effectively reduces human operational errors.

#### 4. BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram showing an arrangement embodied according to the invention.

FIG. 2 is a flow chart showing the operational steps of the memory data transfer process according to the invention.

FIG. 3 is a flow chart showing the operational steps thereof according to the prior art.

#### NOMENCLATURE

10: information processing equipment

11: communication means

12: storage region

13: transfer conditions setting means

14: communication speed decision means of memory data

15: memory range data transfer means

16: preparatory setting means

20: data communication line

30: memory unit



Translation of the words and phrases filled in the accompanying drawings.

As for FIG. 1, please refer to the above nomenclature.

As for FIG. 2 showing the preferred embodiment of the invention, the translation is as follows.

实施例: example

送信处理: transmission process chart

既定速度通信: data communication at predetermined speed

最高速度通信: data communication at maximum speed

終了: end

1: input transfer range of memory data

2: wait for reception of speed information data

3: receive speed information data and decide communication speed based on maximum speed of its own

4: transmit speed information data as decided

5: alter communication speed based on speed information data as decided and wait for a certain time

6: transmit transfer range of memory data

7: read out memory data for transfer

8: receive speed information data

9: receive speed information data as decided

10: alter communication speed based on speed information data as decided and wait for receiving memory data

11: set transfer range of memory data based on received data

12: receive memory data and write memory data in memory unit

As for FIG. 3, the corresponding translation is as follows.

受信处理: reception process chart

入力された速度での通信: data communication at input speed

従来例: prior art

終了: end

13 and 17: input transfer range of memory data

14 and 18: input communication speed

15 and 19: set conditions based on input data

16 and 20: transfer memory data

側装置からのデータの受信を待つ(ステップ3)。

送信側装置は速度情報データを受信したのち、受信した速度情報データと自装置のもつ最高速度からデータの通信速度を決定し(ステップ3)、決定した速度情報データを受信側装置に送出し(ステップ4)、その速度情報データをもとに通信速度を変更して一定時間待機する(ステップ5)。

受信側装置はステップ4の送信により速度情報データを受信したのち(ステップ9)、その速度情報データをもとに通信速度を変更しデータの受信を待つ(ステップ10)。

以上説明した処理は既定の通信速度によって行われる。

次に、送信側装置はステップ1で入力した転送メモリ範囲のデータを受信側装置に送出し(ステップ6)、受信側装置はこの受信データをもとに転送メモリ範囲の設定を行う(ステップ11)。

送信側装置はステップ6のデータ送信処理後メモリデータを読み出して転送し(ステップ7)、受信側装置はそのメモリデータを受信しメモリに

書き込む(ステップ12)。これらのステップ7およびステップ12の処理を繰り返すことにより指定された範囲内のメモリデータを高速に転送することができる。

また、メモリ転送を行う相互の情報処理装置は共通のデータを各メモリ内に持つことになり、そのデータに対する処理分担や並行処理を可能にすることができる。

#### 〔発明の効果〕

以上説明したように本発明によれば、メモリデータ転送前に、通信速度の自動決定および転送メモリ範囲データの転送処理を付加して通信を行い、送信側装置と受信側装置間で転送し同一データを共有することにより、送信装置への転送メモリ範囲入力の手操作を行うだけでメモリデータの転送を行うことができ、操作ミスを減少させることができる効果がある。

#### 4. 図面の簡単な説明

第1図は本発明実施例の構成を示すブロック図。

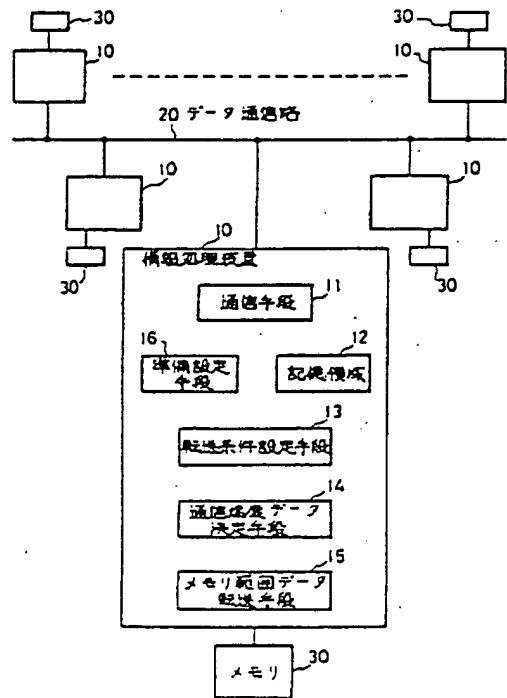
第2図は本発明実施例の処理手順を示す図。

第3図は従来の処理手順を示す図。

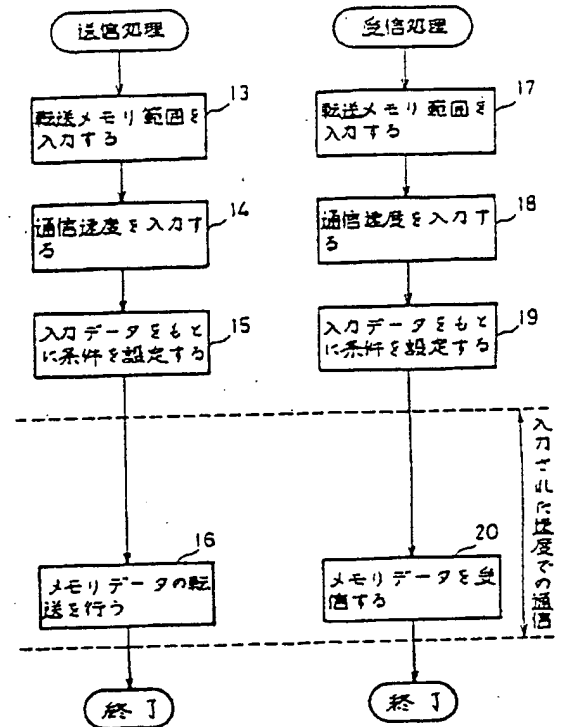
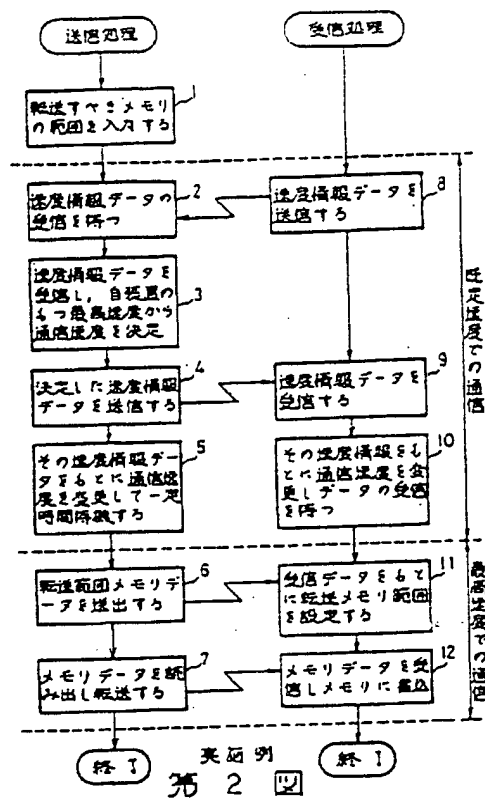
10…情報処理装置、11…通信手段、12…記憶領域、13…転送条件設定手段、14…通信速度データ決定手段、15…メモリ範囲データ転送手段、16…準備設定手段、20…データ通信路、30…メモリ。

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第 1 図



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